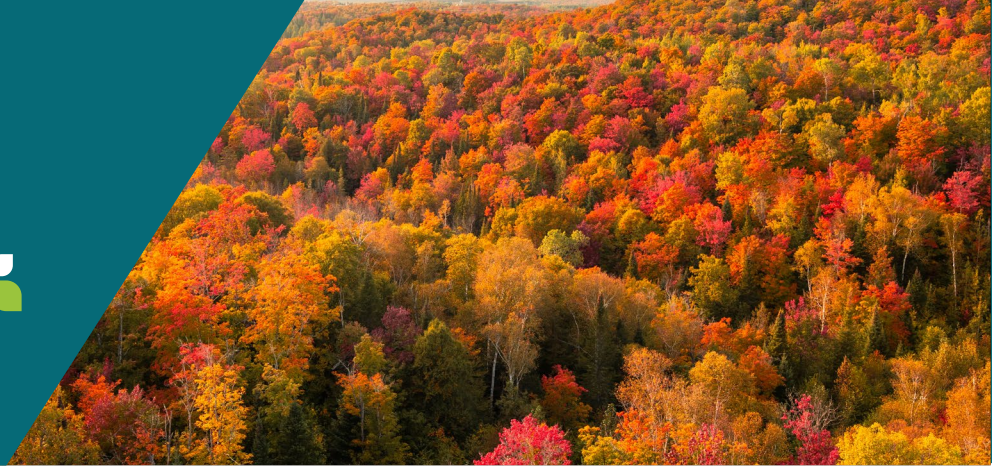
AUTUMN 2024



Climate Trends and Variations Bulletin

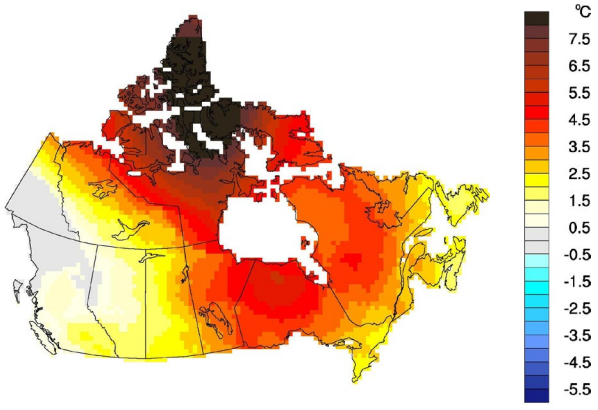
This bulletin summarizes recent climate data and presents it in a historical context. It first examines the national average temperature for the season and then highlights interesting regional temperature information.

Over the past decade, precipitation monitoring technology has evolved and Environment and Climate Change Canada and its partners implemented a transition from manual observations to using automatic precipitation gauges. Extensive data integration is required to link the current precipitation observations to the long-term historical manual observations. The update and reporting of historical adjusted precipitation trends and variations will be on temporary hiatus pending the extensive data reconciliation and will resume thereafter. ECCC remains committed to providing credible climate data to inform adaptation decision-making while ensuring the necessary data reconciliation occurs as monitoring technology evolves.

National Temperature

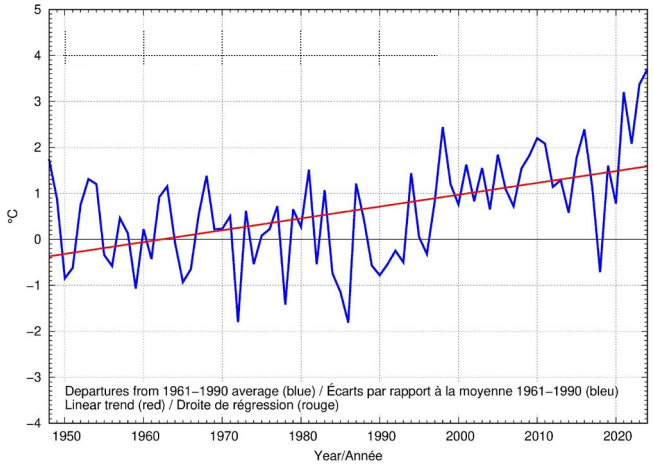
The national average temperature for autumn (September – November) 2024 was 3.7°C above the baseline average (defined as the mean over the 1961–1990 reference period), based on preliminary data. This was the warmest autumn since nationwide recording began in 1948, topping the previous record of 3.4°C set just last year. The coldest autumn occurred in 1986 when the national average temperature was 1.8°C below the baseline average. The temperature departures map shows that most of Canada experienced temperatures at least 2°C above the baseline average, except for regions in northern British Colombia and the southern Yukon which experienced departures close to the baseline. Significant temperature departures greater than 4°C above the baseline average were recorded in central Ontario, Manitoba, Nunavut, and Quebec; while extreme departures greater than 7°C above the baseline average were observed in the high north of Nunavut. Most of the Maritime provinces, Alberta, and Saskatchewan experienced temperature departures between 1°C and 3°C above the baseline. There were no notable national observations of regional temperatures falling below the average of the 1961-1990 reference period.

Temperature Departures from the 1961–1990 Average – Autumn 2024



The time series graph shows that average autumn temperatures across the country have fluctuated annually over the 1948–2024 period. Apart from 2018, the previous two decades have observed temperature departures above the baseline average. The linear trend indicates that average autumn temperatures across the nation have warmed up by 2.3°C over the past 77 years.

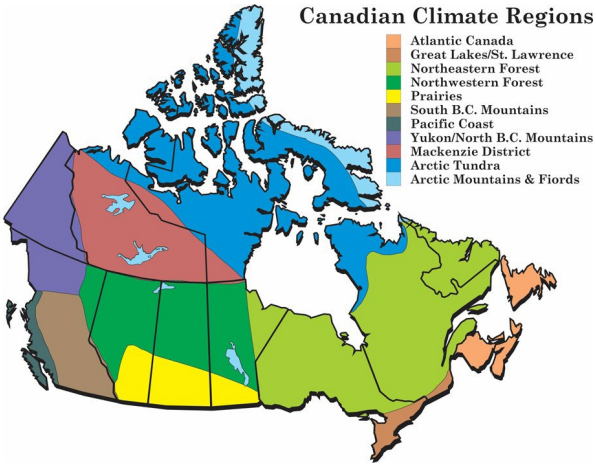
Autumn National Temperature Departures and Long-term Trend, 1948–2024



Regional Temperature

Regionally, eight of the eleven climate regions experienced warmer than average autumn temperatures, ranking among the top 10 warmest since 1948. These regions were the Great Lakes / St. Lawrence (the warmest at 2.6°C above the baseline average); Northeastern Forest (the warmest at 3.9°C above the baseline average); Arctic Tundra (the warmest at 6.3°C above the baseline average); Arctic Mountains and Fiords (the warmest at 6.7°C above the baseline average); Atlantic Canada (the 2nd warmest at 2.2°C above the baseline average); Mackenzie District (the 5th warmest at 3.0°C above the baseline average); the Prairies (the 5th warmest at 2.3°C above the baseline average); and the Northwestern Forest (6th warmest at 2.4°C above the baseline average). None of the eleven climate regions recorded average autumn temperatures in 2024 that ranked among the 10 coolest since 1948. All eleven climate regions exhibited positive trends for autumn temperatures over the past 77 years. The strongest trend was observed in the Arctic Tundra and the Arctic Mountains and Fiords (+3.3°C), while the weakest trend was found in South British Colombia (+0.8°C). A table listing the regional and national temperature departures and rankings from 1948 to 2024 and another table summarizing regional and national trends and extremes summaries are available upon request at btvc-ctvb@ec.gc.ca.

The map of Canadian Climate Regions



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